

May 3, 2013

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Federal Communications Commission  
455 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: Expanding the Economic and Innovative Opportunities of Spectrum  
Through Incentive Auctions, GN Docket No. 12-268

It has been broadly recognized that organizing wireless and TV operations in the 600 MHz band will be a difficult task, and we appreciate the FCC's thoughtful consideration of a complex record.

Many of the commenters in this proceeding have offered Frequency Division Duplex (FDD) band plans designed to maximize the amount of licensed, paired spectrum available for mobile broadband services in the band, while minimizing interference and deployment challenges. The parties to this letter now seek to provide more specific guidance on an FDD band plan and its operational characteristics. Relying on sound engineering analysis, we address the optimal size of the guard bands (including the required duplex gap) necessary for an FDD band plan.

The parties to the January 24 letter setting forth a number of technical FDD band plan principles included mobile operators, broadcasters, and equipment manufacturers who supported a "down from TV 51" approach that proposed paired spectrum above TV 37 with an appropriate duplex gap. The duplex gap in an FDD band plan acts as a guard band between the transmit and receive channels. The separation must be sufficient to permit paired transmit and receive signals on a common antenna with minimum degradation of the RF signals, consistent with known duplexer and filter technologies.

The undersigned believe that the size of the duplex gap appropriate for a paired spectrum FDD approach above TV 37 is between 10 MHz and 12 MHz. Guard bands, including the duplex gap, are technically reasonable if they are designed to both maximize the amount of licensed spectrum that is suitable for mobile wireless service while providing sufficient frequency separation needed between adjacent services to prevent interference and to ensure that the blocks adjacent

to any guard band, including the duplex gap, are essentially fungible with all other 5 MHz blocks. Pursuant to the Middle Class Tax Relief and Job Creation Act of 2012, services could be implemented in the guard bands, including the duplex gap, if they do not create harmful interference to licensed services, but the guard bands may not be increased to accommodate unlicensed service at the expense of additional licensed spectrum.

In our expert view, a separation larger than 12 MHz provides no meaningful benefit from an engineering perspective and would unnecessarily decrease the amount of licensed spectrum available for auction. There is no sound engineering justification for the extremely large (18-28 MHz) duplex gaps proposed by some commenters in this proceeding. Indeed, such a large duplex gap would decrease antenna efficiency and would unnecessarily consume as much as 15 MHz (i.e. three 5 MHz blocks) that could otherwise be auctioned. Finally, a wider duplex gap increases the amount of spectrum that the Commission would need to recover in the reverse auction in order to achieve a minimum auctionable bandwidth in every geographic market in the country for the forward auction.

With respect to the guard band between mobile downlink and TV broadcasters, according to our engineering analysis, no more than 10 MHz of separation is needed between the highest remaining full power TV station and the adjacent downlink block to avoid saturation and blocking of the mobile device receiver or interference to TV broadcast services.

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This engineering and policy guidance is the consensus position of the undersigned parties. Individual parties may offer additional detail regarding this guidance. We look forward to further discussion on these and other related issues, including the potential impact of co- and adjacent channel interference between wireless and broadcast operations, as we all work toward the same goal: adoption of a technically sound band plan that achieves a successful auction and enables the rapid use and deployment of the auctioned spectrum in the 600 MHz band.

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